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COLOR-CALIBRATION SENSOR WITH AUXILIARY CARRIAGE FOR INCREMENTAL PRINTING

ABSTRACT OF THE DISCLOSURE

In one form of the invention, one sensor determines mutual alignment of pens; a second sensor measures color of dots formed on a print medium by the pens. Another form has two carriages — one moving pens to mark on a medium and the second used to refine quality of images produced. In a third form, a sensor measures color of test patterns by one or more pens; a hood — generally around the sensor laterally relative to a sensing direction — excludes ambient light from the sensor during measuring; a mechanism advances the hood along the sensing direction toward the patterns. In a fourth form, a pen ejects multiple liquid-ink drops onto a medium, and a sensor infrequently measures color of resulting dots — only when the pen is not forming images. In this form a door protects sensor optics from coating by ink aerosol when the sensor is not in use, including whenever the pen is writing; a mechanism opens and closes the door before and after sensor use. In a fifth form, a mechanism advances a color-property-measuring sensor into contact with a medium bearing test patterns. In a sixth form, a flashlamp in the printer illuminates test patterns for measurement — at an intensity high enough to make ambient light essentially insignificant, and preferably for a time short enough to make lamp energy usage and heating negligible. In a seventh form, a moving carriage positions a sensor over test patterns and at least one colorimetric reference target is exposed to the sensor. The forms are best used together and are subject to many important preferences.